"SCIENCE COURT"
Educational Objectives

WATER CYCLE (101)

Curricular Content

- Definition of condensation, evaporation, water vapor, water cycle
- Examples of condensation and evaporation
- Demonstrate the presence of water vapor in the air
- Factors that influence rates of evaporation
- Examples of how to set-up and evaluate science experiments

Pro-Social Content

- Proper behavior (e.g., no outbursts; raise your hand to talk; etc.)
- Representation of various people as scientists (including a little girl)
- People taking responsibility for their actions

WORK AND SIMPLE MACHINES (102)

Curricular Content

- Scientific definition of work
- Definition and example of force
- Examples of scientifically defined work
- Definition of mechanical advantage
- How work is measured
- Examples of simple machines
- How machines reduce force at the expense of greater distance

Pro-Social Content

- Representation of various people as scientists
- Reading is revered
- Rewarding smart work

(more . . .)

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GRAVITY (103)

Curricular Content

- Definition of gravity
- All matter has gravity
- Definition of mass
- The greater the mass, the greater the gravity
- Gravity causes weight
- Difference between mass and weight
- Lighter objects are pushed up by heavier ones that are being pulled down by gravity
- How to measure mass and weight

Pro-Social Content

- Representation of various people as scientists
- Consumer caution

INERTIA (104)

Curricular Content

- Newton's first law: An object at rest tends to stay at rest; an object in motion tends to stay in motion.
- Force and Friction: what starts objects moving and what slows them down
- The relationship between mass and inertia
- Definitions of mass and inertia

Pro-Social Content

- Representation of various people as scientists and inventors
- People taking responsibility for their actions
- Looking at the motives for people's outward actions

(more . . .)

SOUND (105)

Curricular Content

- Sound is a wave
- How waves work; waves need a medium to travel
- Sound takes time to travel
- Air as a medium; it's made of stuff
- Modeling good scientific procedure

Pro-Social Content

- Representation of various people as scientists
- People taking responsibility for their actions

(more . . .)

STATISTICS (106)

Curricular Content

- What are statistics?
- What goes into gathering and analyzing good data?
  - selecting a random sample
  - ensuring adequate sample size
  - avoiding bias
  - looking for meaningful connections or correlations
  - identifying cause and effect relationships
- Reinforcing good scientific and mathematic procedure
  - observe
  - hypothesize
  - test and confirm
- Demonstrating various ways of displaying data, including charts and graphs

Pro-Social Content

- Reflective skepticism (to look behind "scientific" claims)
- Representation of various people as scientists and mathematicians
- People taking responsibility for their actions
- Open-mindedness

(more . . .)

HEAT EXPANSION (107)

Curricular Content

- Particle Theory of Matter: All matter is made up of tiny particles called atoms and molecules
- Particles that make up matter are moving
- Heat makes things expand by adding energy to particles making them move faster, spreading farther apart
- Different materials expand at different rates

Pro-Social Content

- Representation of various people as scientists and inventors
- People taking responsibility for their actions
- Value of humility
- Respect for art; art appreciation

(more . . .)

AIR PRESSURE (108)

Curricular Content

- Earth is surrounded by an atmosphere
- Air has weight
- The air in the atmosphere exerts pressure or pushes in all directions
- We don't feel the pressure because it is balanced or equalized all around us

Pro-Social Content

- Representation of various people as scientists and inventors
- People taking responsibility for their actions
- Value of keeping an open mind
- Competition and honesty can go together
- Value of trust

(more . . .)

ELECTRICAL CURRENT (109)

Curricular Content

- Definition of an electric circuit
- Explanation of how electricity travels
- Different materials conduct electricity
- Definition of atoms and electrons

Pro-Social Content

- Sportsmanship, being a good winner and a good loser
- People taking responsibility for their actions
- Representation of various people as scientists and inventors

SOIL (110)

Curricular Content

- Definition of organic and inorganic
- Soil is made of silt, sand, clay and humus
- The relationship between plants and soil type
- The value and role of worms in the soil

Pro-Social Content

- Looking for simple rather than complicated solutions
- People taking responsibility for their actions
- Representation of various people as scientists and inventors
- The value of trust

(more . . .)

LIVING THINGS (111)

Curricular Content

- Everything can be classified as living, non-living, or dead
- The scientific meaning of those classifications
- The value and purpose of classification

Pro-Social Content

- It pays to be honest
- People taking responsibility for their actions
- Representation of various people as scientists and artists

SEASONS (112)

Curricular Content

- The Earth is tilted on its axis
- The Earth has an elliptical orbit around the Sun
- The Earth is broken up into hemispheres
- Seasons are caused by the tilt of the Earth, not the distance of the Earth from the Sun

Pro-Social Content

- Taking shortcuts in learning can lead to mistakes
- People taking responsibility for their actions
- Representation of various people as scientists and teachers

(more . . .)

FOSSILS (113)

Curricular Content

- Fossils are not bones, but are models (or casts) of the past captured in rock
- Fossils require certain conditions in order to be formed
- The surface of Earth has changed over time
- We can learn a lot about the past from fossils

Pro-Social Content

- You can learn and benefit from others' ideas
- People taking responsibility for their actions
- Representation of various people as scientists and teachers
- You can find common ground, even with people with whom you disagree

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